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ENVIRONMENTAL–ECONOMIC ACCOUNTING

Land use of food products

2010

Statistisches Bundesamt

Published by: Statistisches Bundesamt (Federal Statistical Office), Wiesbaden

Homepage: www.destatis.de

You may contact us at
www.destatis.de/contact

Information on this publication
Phone: +49 (0) 611 / 75 27 84

Statistical Information Service
Phone: +49 (0) 611 / 75 24 05

Published in August 2013

Free download
Article number: 5851304-10900-4

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Abbreviations

mn	=	millions
ha	=	hectares
kg	=	kilogram
t	=	tonnes
m²	=	square meter
kcal	=	kilocalorie
%	=	percentage

Introduction

What does the global rise in meat consumption have to do with the destruction of the rainforests? Clearing rainforests is said to open up extra agricultural land for use – either for growing food or for producing energy crops. Alongside the increasing competition for land area arising from the cultivation of (sustainable) energy crops, the areas which can be used for nutritional purposes are becoming an increasingly scarce resource. This is due to a series of additional factors:

- Higher demand for food due to the fast rate of population growth worldwide
- Changes in nutritional habits: increasingly "affluent" foodstuffs (luxury food such as coffee and chocolate, fast food) occupy additional areas
- A growing demand for animal proteins and fats requires higher use of land areas than a diet based mainly on vegetables.

Industrial farming in Germany is leading to increased occupation of land in foreign countries because of the increased need for imports of animal feed. The fattening and dairy sectors are to a large extent reliant on feed imports because livestock are increasingly being fed on imported protein. These imports come from threshold and developing countries such as Brazil, Argentina (soya) and Indonesia (palm oil), for example. These countries often “gain” the areas required through slash-and-burn practices (Brazil and Indonesia). This results in high quantities of harmful greenhouse gases. The slash-and-burn practices also result in a high loss of species in the former rainforests.

In addition to environmental problems, the orientation of agriculture in these countries to an "export economy" also results in a high number of social problems, such as suppressing small farmers. The rise in productivity by increased use of fertilizers and pesticides is also often associated with considerable health problems.

1 Land use of vegetable food and food of animal origin

1.1 Land use for domestic consumption

Less domestic area for food production, more area for energy crops and exports

The way land use is presented focuses on the use of areas in connection with products produced for nutritional purposes. In other words, vegetable-based products used for energy or other purposes are not included when considering the land use for producing food. In the case of domestic agricultural areas, almost 2.2 million hectares of land are in use (2010) – including fallow land and land set-aside.

The areas used are differentiated between, according to whether products are of vegetable or animal origin. This includes reclassifying the areas used for growing animal feed from the vegetable category to the category for "animal origin". This makes it easier to estimate the total area required for domestic production and the domestic consumption of products of animal origin.

The total area required for domestic food consumption was over 20 million hectares in 2010 (see Table 1). It therefore exceeds the domestic area used for nutritional purposes by 5.5 million hectares. This "land deficit" corresponds to the balance of land use for imports and exports. Germany records an import surplus – in other words, a land deficit – which has risen during the entire ten years. In 2010, it was around 27 % of the entire land use of 20.1 million hectares. In 2000, the deficit was just 3.8 million hectares (20 %). Evidently the increased land use for energy crops within the country and the associated decrease in land used for food crops, together with the sharp increase in exports, has led to an increase in the land deficit.

The area used for producing food for domestic consumption rose by 5 % in the period 2000 – 2010. The land use for products of animal origin declined by 6.2 %; it increased by just about 25 % for products of vegetable origin. The proportional land used for products of vegetable origin in 2010 was just about 43 % and that for products of animal origin was over 57 %. In 2000, the equivalent figure for products of animal origin was still 64 %.

Table 1: Land used within the country and abroad for producing food of vegetable and animal origin in 2000, 2005 and 2010 (in 1000 hectares)

Categories	2000	2005	2010	2010 to 2000
	1000 hectares			%
Domestic				
Land used for agriculture 1)	17,067	17,035	16,832	-1.4
Nutrition	**15,392**	**14,892**	**14,660**	**-4.8**
Vegetable nutrition	5,093	4,790	4,841	-5.0
Fodder 2)	10,299	10,102	9,819	-4.7
Energy plants	452	999	1,620	258.3
Material use 3)	400	350	300	-25.0
Fallow land, land set-aside 1)	823	794	252	-69.3
Exports				
Vegetable-based	6,299	6,400	7,149	13.5
Fodder	1,324	1,607	1,622	22.5
Others	4,975	4,793	5,527	11.1
Animal origin 4)	3,112	4,104	5,600	79.9
Total	**9,411**	**10,504**	**12,749**	**35.5**
Of which imports	2,896	3,674	5,072	75.1
Vegetable origin	2,352	2,817	3,279	39.4
Animal origin	544	857	1,794	229.5
Imports				
Vegetable-based	10,151	10,937	14,130	39.2
Fodder	3,394	3,473	4,854	43.0
Others	6,758	7,463	9,276	37.3
Animal origin [4)]	3,034	3,388	4,076	34.4
Total	**13,185**	**14,324**	**18,206**	**38.1**
Import surplus (Imports-Exports)				
Vegetable-based	3,852	4,536	6,981	81.2
Animal based	-79	-717	-1,524	
Total	**3,774**	**3,820**	**5,457**	**44.6**
Domestic consumption of food	**19,166**	**18,712**	**20,117**	**5.0**
Vegetable origin 5)	6,875	7,460	8,589	24.9
Animal origin 6)	12,290	11,251	11,527	-6.2

1) Fachserie 3 Land- und Forstwirtschaft, Fischerei, Reihe 3.1.2 Landwirtschaftliche Bodennutzung, verschiedene Jahrgänge .
2) Roughage and other preparations of fodder.
3) Estimation on basis of von Oertel, B. (2007), S. 30.
4) Incl. dairy products.
5) Excl. fodder.
6) Incl. fodder.

2. Land use of products of animal origin

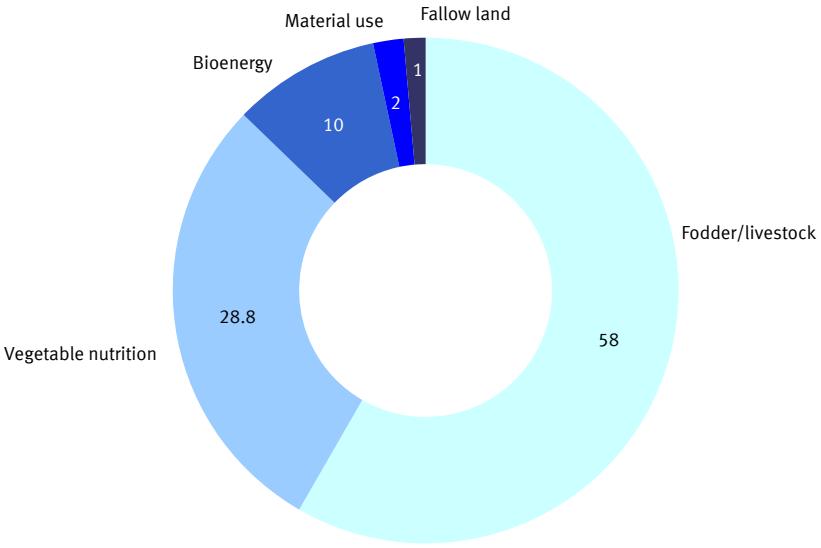
2.1 Domestic agricultural area

Fodder crops on at least 58% of agricultural land

The production of products of animal origin (meat, dairy products, eggs) is connected to the consumption of vegetables used as raw materials in farming. These crops are used as fodder by livestock. This feed comes from both Germany and abroad. Accordingly, this results in an use of domestic or foreign land areas. To calculate the land used by domestic consumption of products of animal origin, the area used for producing exports is subtracted and the area for imports is added.

In 2010, the agricultural land in Germany totalled 16.8 million hectares, of which 11.9 million hectares were arable land and 4.7 million hectares were permanent pasture. The remainder is in use as tree nurseries, orchards, vineyards, Christmas tree nurseries and domestic gardens and vegetable plots. Of agricultural land in 2010, 58.3% was used for growing fodder crops, 28.8% for growing food and 9.6% for growing energy crops (see Figure 1).

Figure 1: Domestic agricultural land by type of use in 2010 in %



The domestic land use for nutritional purposes totalled 14.7 million hectares in 2010. The equivalent figure in 2000 was still 15.4 million hectares. This corresponds to a decrease of 4.8 %. This decrease affects both the land used for vegetable-based food crops (–5.0 %) as well as that used for fodder crops (–4.7 %).

Table 2: Land use for domestic nutritional purposes, exports and domestic consumption

Categories	2000	2005	2010	2010 to 2000
	1000 hectares			%
Land used for agriculture (domestic territory)	17,067	17,035	16,832	-1.4
Land used for nutrition	15,392	14,892	14,660	-4.8
Vegetable nutrition	5,093	4,790	4,841	-5.0
Fodder	10,299	10,102	9,819	-4.7
Land used for exports	6,515	6,830	7,676	17.8
Land used for domestic consumption	8,877	8,062	6,983	-21.3

The land use for exporting food increased by 17.8 % compared to 2000, whereas it fell by 21.3 % for domestic consumption. In the year 2000, the area used for exports of food was still 2.4 million hectares lower than that used for domestic consumption. In contrast, land used for exports was 0.7 million hectares higher than for domestic consumption in 2010. In 2010 therefore, 52.3 % of the land use for nutritional purposes falls into producing for exports and 47.6 % for producing food for domestic consumption.

2.2 Land use for fodder

Fattened pigs consume proportionately less fodder, but require more land for fodder production

Table 3 shows the animal feed produced for the year 2010 according to type of livestock and the use of land areas for producing these quantities of feed in Germany and abroad. Of the total feed produced (130.2 million tonnes) almost 40 % is allocated to dairy cows and other female cattle and just about 30 % to beef cattle, followed by about 15 % for pigs and just about 10 % for calves.

Table 3: Feed consumption by livestock and related land use in 2010

Type of livestock	Fodder	Land use	Fodder	Land use
	1000 tonnes	1000 hectares	% of total	
Beef cattle	37,882	3,437	29.1	26.2
Cows and femals cattles	50,865	4,276	39.1	32.6
Calves	12,435	834	9.5	6.4
Feeding pigs	19,375	3,285	14.9	25.0
Broilers/ laying hens	4,492	880	3.4	6.7
Sheep/goats	2,721	189	2.1	1.4
Horses	2,473	224	1.9	1.7
Total	**130,243**	**13,123**	**100.0**	**100.0**

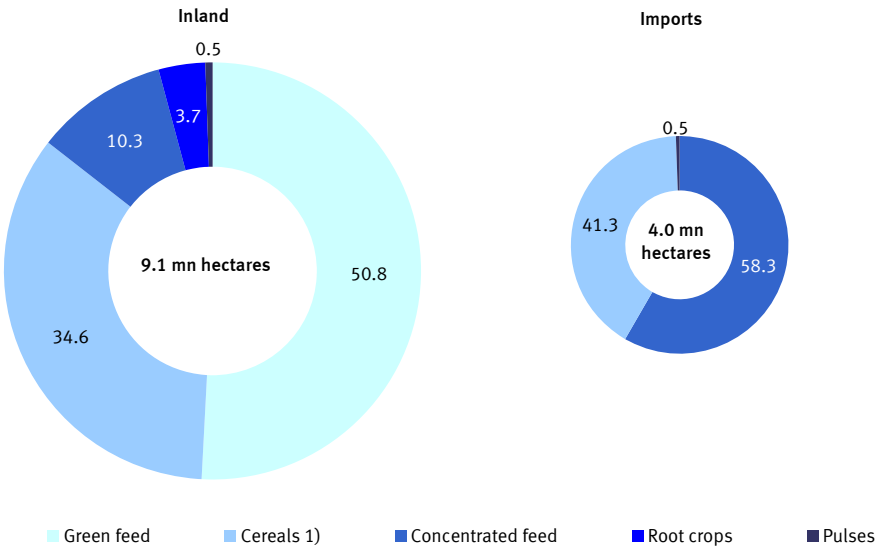
The land used for producing feed reveals a similar distribution to feed production. The proportion of cattle (cows, beef cattle and calves) in the area used for producing the feed is somewhat lower than its share of the feed consumption in terms of quantity; the situation is exactly the reverse in the case of pigs and chickens. This is related to

the fact that the green fodder used for cattle comes exclusively from within the country, whereas feed for other animals (e.g. pigs or broilers) increasingly stems from imports. The imported feed has a higher requirement for land area than domestic feed because of the more extensive forms of farming found abroad.

Green fodder from domestic area, concentrated feed from abroad

Figure 2 shows the area of land used for fodder crops subdivided into feed from domestic production and feed from imports in the year 2010. The land use for the production of feed in Germany is 9.1 million hectares in 2010 and the land use abroad for feed imported by Germany is 4.0 million hectares. The land use for feed within Germany is subdivided into 50.8 % green fodder, 34.6 % cereals and 10.3 % concentrated feed. Among the imports, the land area required for producing concentrated feed is highest, at a share of 58.3 %, followed by cereals at 41.3 %.

Figure 2: Land areas used for fodder produced domestically and for imports in 2010 in %

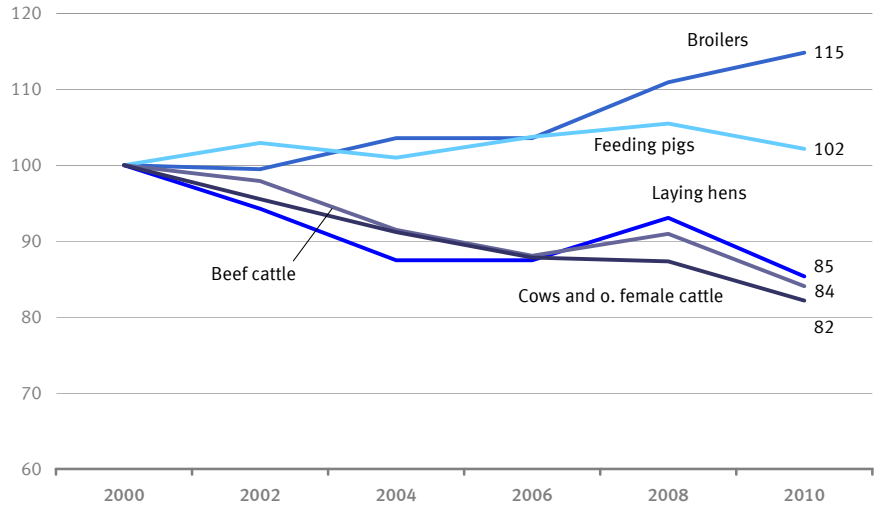


1) Incl. silage maize.

More pigs and chickens, fewer cattle

Figure 3 shows the change in livestock maintained between 2000 and 2010. The stocks of beef cattle, cows and female cattle decreased whilst the number of fattened pigs and broilers rose. Slaughtering showed similar developments.

Figure 3: Livestock, 2000 – 2010
Index 2000 = 100



Sharp rise in fodder imports

Table 4 shows the feed consumption by livestock according to feed origin. Between 2000 and 2010, the feed volume decreased overall by 10.2 %. The feed from domestic origin decreased by 15.1 %, whilst feed from imports rose by just about 56 %. The rise in imports is both due to a rise in imports of cereals and to an increase in concentrated feed, especially oil-seed cake and oil meal.

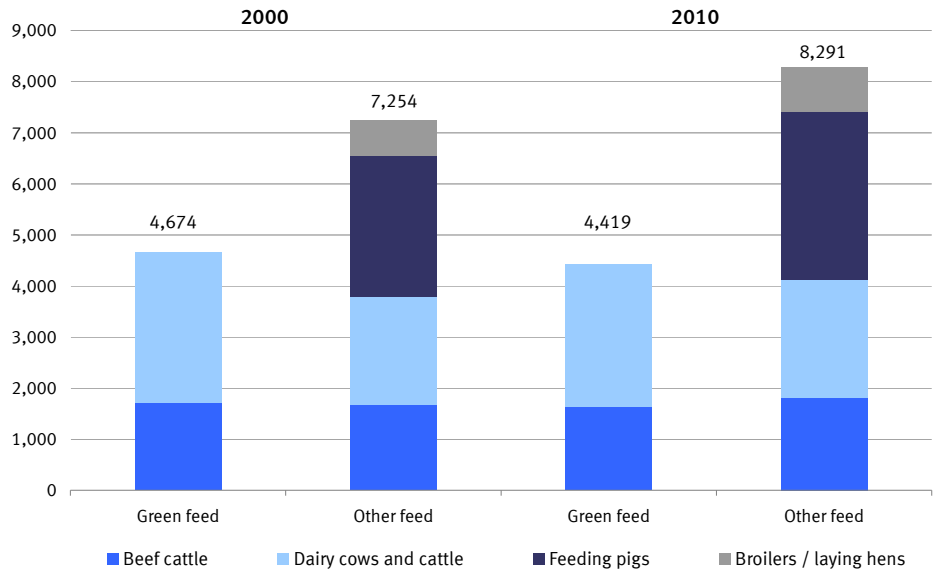
Table 4: Feed according to origin, 2000 - 2010

Origin	2000	2002	2004	2006	2008	2010
	2000=100					
Domestic origin.....	100.0	98.8	93.4	91.2	86.1	84.9
Imports.....	100.0	93.3	103.4	112.7	144.1	156.0
Total.....	**100.0**	**98.5**	**94.1**	**92.7**	**90.0**	**89.8**

More land for concentrated feed

A comparison of the land areas used for feed in 2000 and 2010 reveals that the area assigned to green fodder has decreased by 5.5 %, whilst the area used for other types of feed, particularly concentrated feed, has risen by 14.2 %. The area used by concentrated feed is located in Germany as well as abroad. Abroad, the requirement for land is greater than in Germany because lower hectare yields are achieved there due to the more extensive forms of agriculture. Concentrated feed is particularly used in the fattening of pigs and poultry.

Figure 4: Land used by feed in Germany and abroad in 2000 and 2010 broken down by feed and livestock type



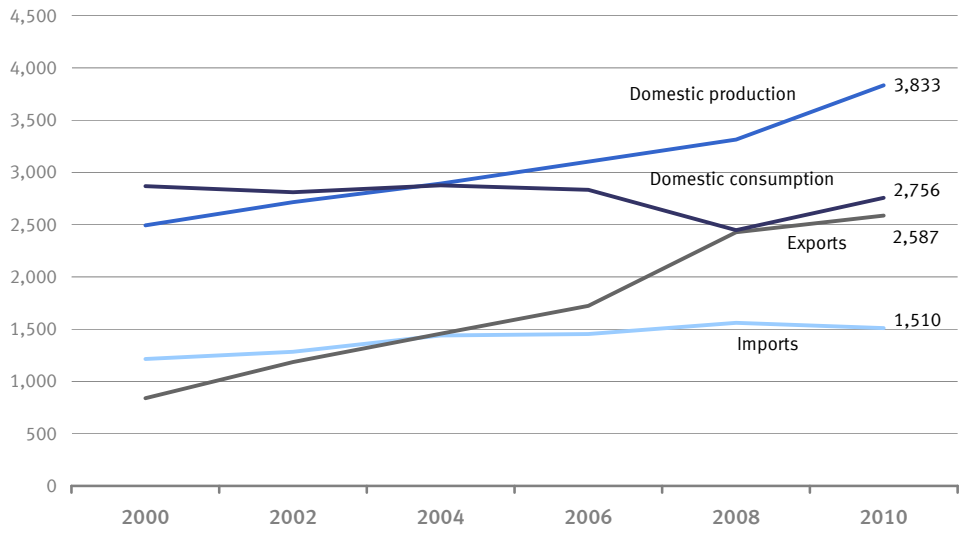
2.3 Land use of products of animal origin

Higher domestic production of meat, sausage and milk largely for exports

The large area requirements for the production of livestock feed has to be transferred to the land use of products of animal origin.

Between 2000 and 2010, domestic production of meat (Figure 5) rose from 2.5 million tonnes to 3.8 million tonnes, whilst domestic consumption decreased slightly from 2.9 million tonnes to 2.8 million tonnes. One reason for the high domestic production is the increased export of meat. This has more than trebled during the period under review, i.e. from 0.8 million tonnes to 2.6 million tonnes. Imports rose from 1.2 to 1.5 million tonnes.

Figure 5: Domestic production, imports, exports and domestic consumption of meat
in 1,000 tonnes



Domestic production of sausage products has risen by almost 10% from 2.6 million tonnes to 2.9 million tonnes. At the same time exports of sausage products quadrupled from 0.12 million tonnes (2000) to 0.5 million tonnes (2010). Imports likewise rose from 0.13 to 0.3 million tonnes. Domestic consumption rose slightly from 2.6 million tonnes (2000) to 2.7 million tonnes (2010).

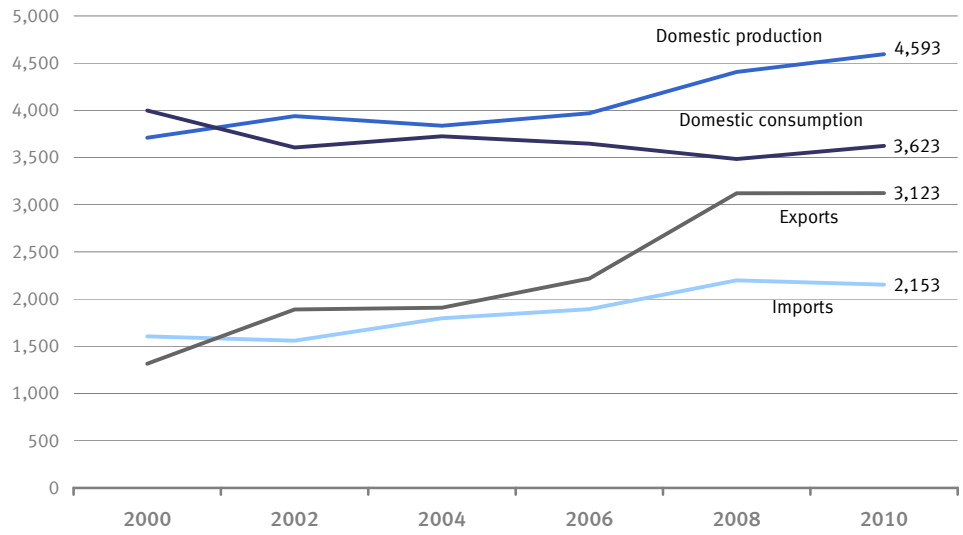
In the case of dairy products, too, there was a steep increase in exports (+32 %) and imports (+37 %) during this period. Domestic production increased by 12 % and domestic consumption by 11 %.

Land use for meat exports is increasing whilst that for domestic consumption is decreasing

The land use for products of animal origin has altered similarly to the quantities in the period 2000 – 2010. Land use for meat, sausage products, dairy products and eggs has increased, whilst there have only been slight changes in domestic consumption compared with 2000.

Land use for the domestic production of meat rose during the period 2000 – 2010 from 3.7 million hectares to 4.6 million hectares (+23.8 %) (see Figure 6). In contrast, the area for domestic consumption decreased by 9.4 % from 4.0 million hectares to 3.6 million hectares. Particularly high growth is evident in the land used for meat exports: there was an increase here from 1.3 million hectares to 3.1 million hectares (+137 %). The land area for imports rose from 1.6 million hectares to 2.1 million hectares (+34.1 %).

Figure 6: Land use for domestic production, imports, exports and domestic consumption of meat
in 1,000 hectares



Meat occupies one third of the land for domestic production, but more than half of the area for exports

Table 5 shows the use of land for the different types of products of animal origin from domestic production, imports and exports and domestic consumption. The land use for meat embodies 33.7 % of the total area for domestic production. In the case of imports and exports, the percentages are much higher still, at 52.8 % and 55.8 %. Among sausage products, the share in domestic production is 26.8 %, with 6.4 % and 8.8 % for exports and imports respectively. In the case of dairy products, the land use for domestic production as well as for imports and exports are between 35 % and 37 %.

Table 5: Land use for products of animal origin from domestic production, imports, exports and for domestic consumption in 2010

Categories	Meat	Sausage	Dairy products	Eggs	Total
	in 1000 hectares				
Domestic production1)	4,593	3,647	5,020	371	13,632
Imports.....	2,153	261	1,427	235	4,076
Exports.....	3,123	490	1,934	53	5,600
Domestic consumption.....	**3,623**	**3,418**	**4,513**	**554**	**12,108**
	in percent of total				
Domestic production1).....	33.7	26.8	36.8	2.7	100.0
Imports.....	52.8	6.4	35.0	5.8	100.0
Exports.....	55.8	8.8	34.5	1.0	100.0
Domestic consumption.....	**29.9**	**28.2**	**37.3**	**4.6**	**100.0**

1 These results differ slightly from the results in table 1, since the calculations in this table cover several periods, whereas table 1 is based on a year-specific calculation.

2.4 Land use for imports and exports of products of animal origin

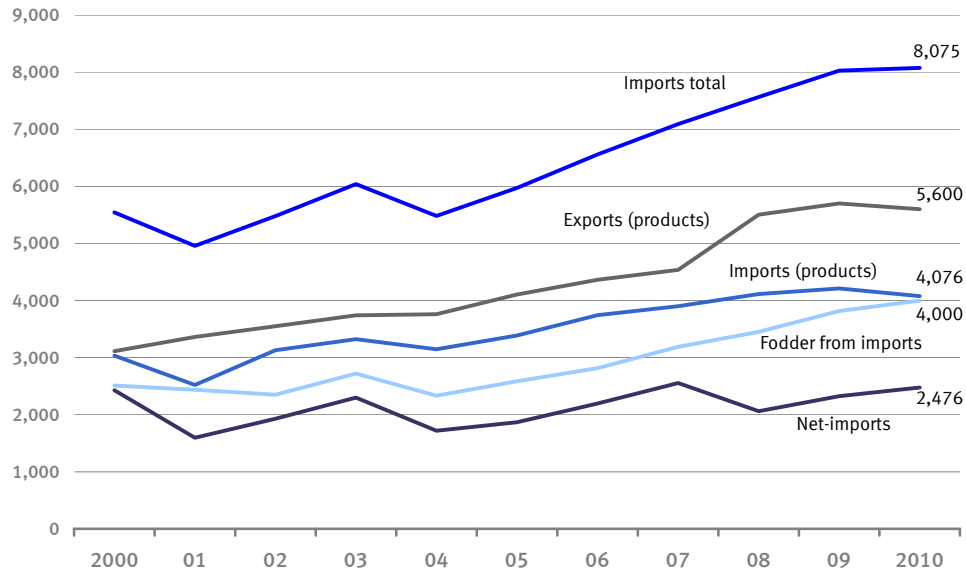
High growth of area for imports of fodder and imported goods for producing exports

When considering domestic production, imports, exports and domestic consumption of products of animal origin, it was shown that imports and exports grew strongly during the period 2000 – 2010. This steep growth in the exchange of goods with products of animal origin is studied in more detail below.

Figure 7 shows the change in land use for animal feed and products of animal origin with regard to imports and exports for the years 2000 – 2010.

It is shown that despite the high increase in land area for imports of feed (+60 %) and products of animal origin (+34.4 %), net imports (2.43 million hectares in 2000 to 2.48 million hectares in 2010) remained almost unchanged (+1.9 %). This is because the land area used for exports has also grown strongly (+80 %).

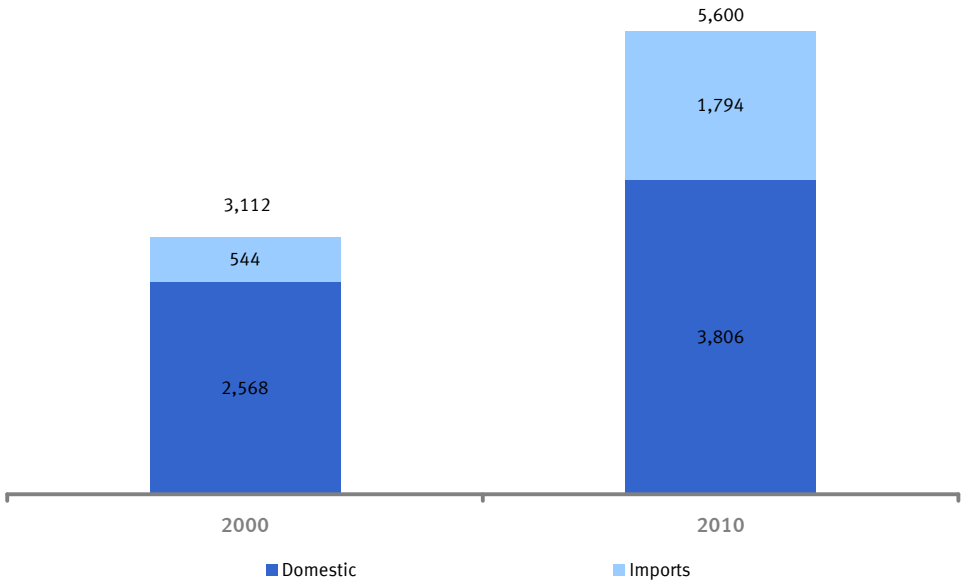
Figure 7: Land used for feed imports and imports and exports of products of animal origin, 2000 – 2010
in 1,000 hectares



Share of imports in land use for exports increases, domestic share falls

In the production of export goods, import goods are also used to a high extent. Figure 8 shows how the import share in the land use for exports changed between 2000 and 2010: In 2000, the import share was still 17.5 % (544,000 hectares), in 2010 it was now 15 percentage points higher at 32.0 % (1.8 million hectares). Land used for exports rose in total from 3.1 million hectares (2000) to 5.6 million hectares (2010).

Figure 8: Land used for exports of products of animal origin and import shares of the exports in 2000 and 2010
in 1,000 hectares



2.5 Land use per capita

Domestic consumption of food: area used for dairy products is highest

On the basis of the land area used for domestic consumption, it is possible to determine the land use per capita (see Table 6). In 2010, this was 1,481 square metres/capita and therefore has diminished slightly compared with 2000 (1,508 square metres/capita). In the case of meat, the per capita value diminished by –8.9 %. This was a steeper rate of decrease than for the overall value.

Table 6: Land use in m² per capita for products of animal origin – domestic consumption

Products of animal origin	2000	2010	2010 to 2000
	m²/per capita		%
Meat	486	443	-8.9
Sausage	413	418	1.3
Dairy products	562	552	-1.7
Eggs	47	68	44.5
Total	**1,508**	**1,481**	**-1.8**

In 2010, the percentages of the total area used for domestic consumption of products of animal origin were 37 % for dairy products, 30 % for meat, 28 % for sausage products and just about 5 % for eggs.

Vegetable-based products require less land than animal products

From an environmental viewpoint the specific area used for products of animal and vegetable origin is highly significant. Table 7 shows the land used for selected products of animal and vegetable origin in relation to the quantities produced and the calorific content of the products.

Table 7: Land use for selected products of animal and vegetable origin (domestic production)

Products	m^2 /kg [1)]	m^2 /10^3 kcal [2)]
Beef	33.1	13.7
Porc	9.1	4.0
Chicken	5.8	2.6
Lamb/goat meat	15.0	7.7
Milk	1.4	2.3
Butter	34.3	4.6
Cheese	11.2	3.4
Eggs	3.8	2.4
Potatos	0.3	0.3
Bread	1.9	0.9

1) Average value of 2000 to 2010.
2) On basis of www.kalorientabelle.net

The highest use of land area per unit of product weight applies to butter (34.3 m^2/kg), followed by beef (33.1 m^2/kg) and mutton/lamb and goat meat (15.0 m^2/kg). Butter has a high milk fat content of over 80% and uses large quantities of milk with a correspondingly large area of land required for its production. Cheese requires an area of 11.2 m^2/kg and pork 9.1 m^2/kg. Products of vegetable origin have a much lower specific area footprint than products of animal origin. For example, bread has an area footprint of 1.9 m^2/kg but potatoes only require 0.3 m^2/kg.

A comparison of the specific land areas required yields more information about the nutrient content of the food than about its weight. This enables a calculation of the land area required in order to feed one person, even in the case of different diets. Information on the nutrient content of foods is given in calories. This information is presented in column 2 of Table 7.

Measured in m^2/10^3 kilocalories, the area for producing animal products is much greater than for pure vegetable-based products. Consumption of 1,000 kilocalories of beef is equivalent to 13.7 m^2 of land, whilst for potatoes the figure is only 0.3 m^2. Were a middle-aged woman with a calorie requirement of approximately 2,300 kilocalories to eat pork exclusively each day for one year, this would necessitate an area of 0.3 hectares (3,000 m^2) per year. In the case of a purely vegetarian diet – using potatoes for example – only an area of 220 m^2 is required per year. This is less than one tenth of the area required for pork. The nature of the diet therefore has considerable influence on the entire land area required for nutritional purposes.

3. Land use of vegetable food

3.1 Imports

High growth in imports of vegetable-based products

For imports of agricultural raw materials and food products, Germany – in addition to the agricultural land used domestically – also uses agricultural areas abroad. However, at the same time Germany is also a significant exporter of food products. Their production entails the use of agricultural raw materials and pre-products from within the country and abroad and this is also associated with a corresponding use of land areas in Germany and abroad. The total land area for the domestic consumption of vegetable-based products is calculated on the basis of calculations on the land areas for import and export goods and domestic production.

Quantities of agricultural raw materials and food products of vegetable origin imported into Germany rose by 36 % between 2000 and 2010 from 40.3 million tonnes to 54.8 million tonnes (see Table 8). Particularly high growth was observed for cereals (+124.5 %), animal and vegetable fats and oils (+106.4 %) and beverages (+94.0 %).

Table 8: Imports of products of vegetable origin in 2000 and 2010

Products [1]	2000	2010	2010 to 2000	
	1,000 tonnes		%	
Vegetables	4,350	4,724	8.6	8.6
Fruits and nuts	5,597	5,854	10.7	4.6
Coffee, tee, spices etc	910	1,359	2.5	49.4
Cereals	3,731	8,375	15.3	124.5
Products of the milling industry	740	907	1.7	22.4
Oil seeds and oleaginous fruits	6,497	7,136	13.0	9.8
Animal and vegetable fats and oils	1,884	3,888	7.1	106.4
Sugar and sugar confectionary	1,281	1,705	3.1	33.1
Cocoa and cocoa preparations	684	1,059	1.9	54.9
Preparations of cereals	931	1,510	2.8	62.3
Preparations of vegetables, fruits etc	3,007	3,427	6.3	14.0
Misc. edible preparations	445	849	1.5	91.0
Beverages, spirits	3,507	6,802	12.4	94.0
Waste from food industry, prep. of fodder	6,746	7,221	13.2	7.0
Total	**40,310**	**54,816**	**100.0**	**36.0**

1) According the classification of foreign trade statistics 2010.

Land is used in each country of origin for the production of imported goods. In 2010, the largest area was taken up for oil-seeds and oleaginous fruits, followed by the item "residues and waste from the food industries", "prepared animal fodder" and "cereals" (see Table 9). The same items also occupy the top three places among the quantities of imports.

Table 9: Land area for imported vegetarian food, 2000 and 2010

Products [1]	2000	2010	2010	2010 to 2000
	1,000 hectares		%	
Vegetables	922	823	5.8	-10.7
Fruits and nuts	492	531	3.8	7.9
Coffee, tee, spices etc	1,024	1,386	9.8	35.3
Cereals	607	1,723	12.2	183.8
Products of the milling industry	184	176	1.2	-4.0
Oil seeds and oleaginous fruits	2,777	2,876	20.4	3.6
Animal and vegetable fats and oils	805	1,668	11.8	107.3
Sugar and sugar confectionary	23	30	0.2	34.2
Cocoa and cocoa preparations	784	1,479	10.5	88.5
Preparations of cereals	230	390	2.8	69.4
Preparations of vegetables, fruits etc	405	506	3.6	25.0
Misc. edible preparations	4	10	0.1	180.9
Beverages, spirits	454	608	4.3	34.0
Waste from food industry, prep. of fodder	1,441	1,923	13.6	33.4
Total	**10,151**	**14,130**	**100.0**	**39.2**

1) According the classification of foreign trade statistics 2010.

The total land area for imports rose between 2000 and 2010 from 10.2 million hectares to 14.1 million hectares, i.e. by 39.2 %. Alongside "diverse food preparations", a quantitatively insignificant item, it was above all cereals (+183.8 %), animal and vegetable fats and oils (+107.3 %) and cocoa and cocoa preparations (+88.5 %) which recorded particularly high growth.

Mainly imported products are used in the production of export products of vegetable origin

The large increase in the land area for imports is closely related to the growth of exports. Imported products are used to a large extent in the production of vegetable-based export products, e.g. beverages (juices). In terms of land area, the import share comes to almost half the entire area for exports (3.3 million hectares of 7.1 million hectares in 2010, see Table 1). In addition, for certain stimulants such as "coffee and tea" and "cocoa preparations" (chocolate products) considerable growth in quantities and land areas is recorded, which can be traced back to the rise in domestic consumption of these products.

Brazil, France and the Netherlands are the most important supplier countries

The most important countries of origin for imported goods in 2010 were Brazil (12 %), France (11 %) and the Netherlands (9 %) (see Table 10). Imports from these three countries alone constituted more than 30 % of total imports. The imports from Brazil are in particular "oil seeds and oleaginous fruits" and "residues from the food industries; prepared animal fodder", and in the case of France "vegetable fats and oils". In terms of vegetable-based products, Germany imports mainly "cereals" and "vegetable fats and oils" from the Netherlands.

In respect of land use, the above countries occupy the top three places. Following Poland, is the Ivory Coast with 5.3 % of the total land use.

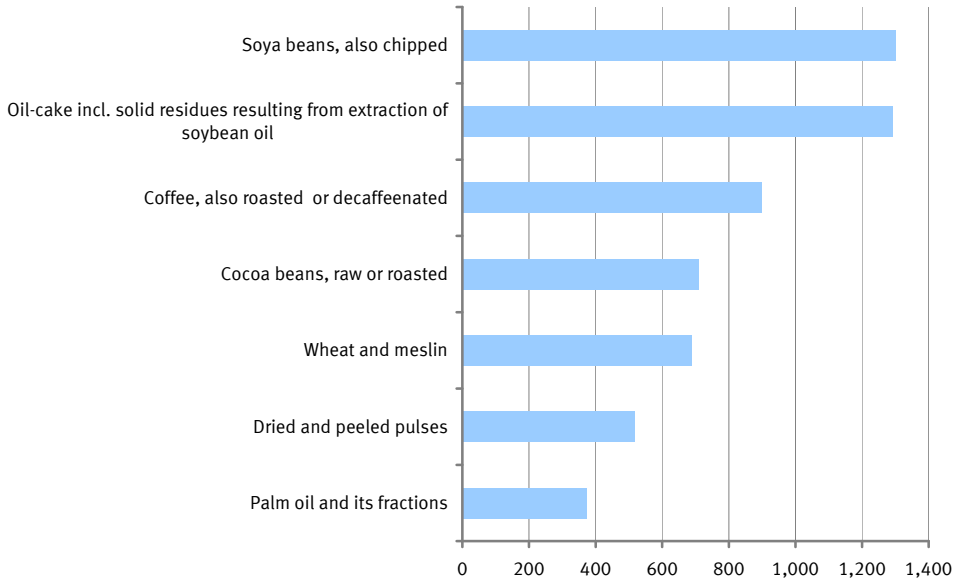
Table 10: Imports of vegetable-based products in 2010 and their land areas according to country of origin

Country	Volume		Land use	
	1,000 tonnes	%	1,000 hectares	%
Brasil	4,548	12.2	1,766	16.5
France	4,217	11.3	647	6.0
Netherlands	3,512	9.4	645	6.0
Poland	1,927	5.2	585	5.5
Ivory coast	460	1.2	563	5.3
Argentinia	1,505	4.0	562	5.2
Italy	2,917	7.8	467	4.4
Czech Republic	1,732	4.6	466	4.3
Indonesia	1,221	3.3	359	3.3
Spain	2,510	6.7	219	2.0
Others	12,775	34.2	4,437	41.4
Total	**37,322**	**100.0**	**10,714**	**100.0**

The high amount of land used in the Ivory Coast is due to the areas needed for cultivating cocoa plants. In relation to the weight of the cocoa beans and the processed products (cocoa paste and cocoa butter), this requires relatively large cultivated areas.

In terms of the absolute cultivated areas as well, "cocoa beans and cocoa paste" ranks fourth among the most land-intensive products (see Figure 9).

Figure 9: Land used for imports of vegetable-based products, 2010
in 1,000 hectares



The largest cultivated area among imported vegetable-based products was for growing imported soya beans and totalled around 1.3 million hectares. This is followed by the

cultivated area required for producing imported soya cake (1.3 million hectares). Together these areas make up approximately 24 % of the entire land area for imports.

Other significant areas are used in the imports of coffee (0.9 million hectares) and cocoa beans (0.7 million hectares).

3.2 Exports

Almost half of the land use for export goods is located abroad

Germany's most important export goods in the field of products of vegetable origin are "cereals", "residues and waste from the food industries; prepared animal fodder" and "beverages and spirits" (see Table 11). The last item includes mineral water, with 5.5 million tonnes (2010). This good is not allocated any land area.

Table 11: Exports of products of vegetable origin in 2000 and 2010

Products [1]	2000	2010	2010 to 2000	
	1,000 tonnes		%	
Vegetables	1,805	2,245	4.8	24.4
Fruits and nuts	401	960	2.1	139.7
Coffee, tee, spices etc	236	594	1.3	151.5
Cereals	14,073	11,902	25.5	-15.4
Products of the milling industry	2,052	2,079	4.4	1.3
Oil seeds and oleaginous fruits	1,161	889	1.9	-23.4
Animal and vegetable fats and oils	2,254	2,138	4.6	-5.2
Sugar and sugar confectionary	2,202	2,211	4.7	0.4
Cocoa and cocoa preparations	457	902	1.9	97.2
Preparations of cereals	1,098	2,050	4.4	86.6
Preparations of vegetables, fruits etc	1,545	1,835	3.9	18.8
Misc. edible preparations	605	1,268	2.7	109.7
Beverages, spirits	10,148	9,881	21.1	-2.6
Waste from food industry, prep. of fodder	5,257	7,800	16.7	48.4
Total	**43,293**	**46,752**	**100.0**	**8.0**

1) According the classification of foreign trade statistics 2010.

The entire land area for exported products of vegetable origin amounted to 7.1 million hectares in 2010 (see Table 12). This is made up of the corresponding land area within the country (2010: 3.8 million hectares) and that abroad. This refers to the land area for goods imported to Germany which are used in the production of the export goods (2010: 3.3 million hectares).

Almost half the land use for export goods (2010: 45.9 %) is located abroad. In the case of certain products, such as "coffee, tea", 100 % of the land area is located abroad. For cocoa and cocoa products as well, e.g. chocolate, the land area is mainly located abroad. The import share here in 2010 was 69 %.

Table 12: Land area for exports of products of vegetable origin, 2000 and 2010

Products [1]	2000	2010		2010 to 2000
	1,000 hectares		%	
Vegetables	71	78	1.1	9.7
Fruits and nuts	25	35	0.5	41.6
Coffee, tee, spices etc	253	618	8.6	144.4
Cereals	2,192	1,623	22.7	-26.0
Products of the milling industry	306	292	4.1	-4.6
Oil seeds and oleaginous fruits	356	249	3.5	-30.0
Animal and vegetable fats and oils	762	630	8.8	-17.2
Sugar and sugar confectionary	26	24	0.3	-6.4
Cocoa and cocoa preparations	551	1,145	16.0	107.8
Preparations of cereals	109	184	2.6	68.9
Preparations of vegetables, fruits etc	87	119	1.7	37.5
Misc. edible preparations	150	263	3.7	75.6
Beverages, spirits	163	366	5.1	123.6
Waste from food industry, prep. of fodder	1,250	1,524	21.3	22.0
Total	**6,299**	**7,149**	**100.0**	**13.5**
of which imported materials and supply	2,352	3,279		39.4
percent of total	*37.3*	*45.9*		

1) According the classification of foreign trade statistics 2010.

The greatest land area for exports in 2010 was taken by cereals (22.7 %), followed by "residues from the food industries; prepared animal fodder" (21.3 %) and "cocoa and cocoa preparations". Particularly high growth in land area was recorded for "coffee, tea" (+144 %), "beverages and spirits" (+124 %) and "cocoa and cocoa preparations" (+108 %).

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